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University of Kentucky

Marketing Kentucky Livestock by Motor Truck.

BULLETIN NO. 344.



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BULLETIN NO. 344.

Marketing Kentucky Livestock by Motor Truck.

C. D. PHILLIPS.*

During the last decade the motor truck has become increasingly important in the marketing of American livestock. In 1931, 19,784,423 head, or 31 percent of the livestock received at the 16 leading livestock markets of the United States, were delivered by trucks, whereas only 5 percent were marketed by truck in 1920. The percentage of livestock transported by motor truck since 1916 is shown in Figure 1. The rapid development of this method of transporting livestock has created profound changes in the organization of livestock marketing, and in the methods of selling and handling livestock. At the same time much confusion as to rates, services, and practices of middlemen has developed. The purpose of this study is to examine the extent of the movement in Kentucky, to ascertain the services rendered by the new types of middlemen and to analyze some of the problems of livestock marketing that have been created by the development of motor truck transportation.

The extent of the development of motor transportation is dependent upon prevailing methods of marketing and the adequacy of other means of transportation. Consequently, in an area where the conditions of production, marketing and transportation are as diverse as in Kentucky, the variation in the growth of the use of motor trucks is naturally large. Country

*The author is indebted to Dean Alvin E. Evans of the College of Law, University of Kentucky, for information furnished in regard to the legal phases of trucking; he is also indebted to the Union Stock Yards of Cincinnati, Ohio, the Bourbon Stock Yards Company of Louisville, Kentucky, the Evansville Union Stock Yards Company of Evansville, Indiana, the Bourbon Livestock Commission Company of Evansville, Indiana, for access to their records and furthermore, to the truckers, livestock producers, The Kentucky State Highway Commission, The Kentucky State Tax Commission, and other agencies and individuals who assisted in providing the data and information needed to make this study possible.

buyers, terminal market commission dealers, local packers and packer-buyers furnish market outlets for livestock produced in this state, while at least three important kinds of markets (country, secondary or auction, and central) and a relatively

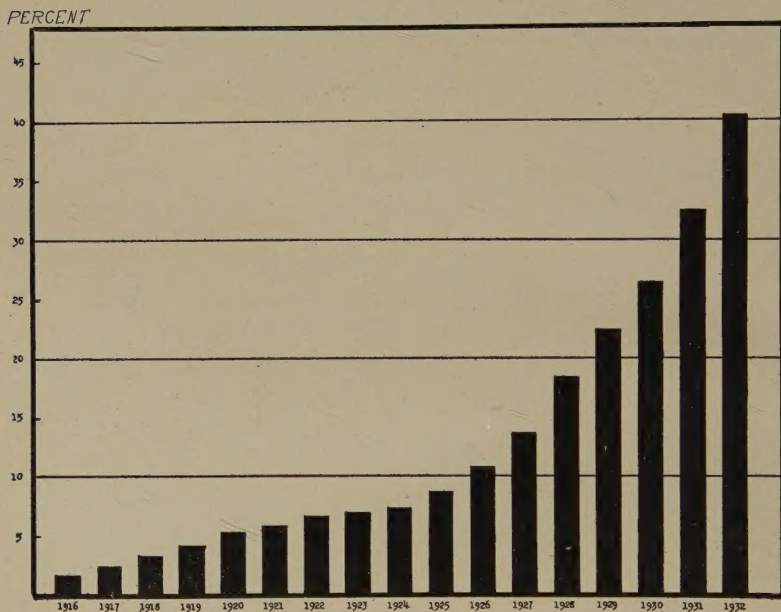


Figure 1. The percentage of livestock receipts at the sixteen leading livestock markets, classed as "driven-in" receipts. Data from "Driven-in Receipts of Livestock," 1931, published by the United States Department of Agriculture.

large number of markets, as shown in Figure 2, are available to Kentucky livestock farmers and livestock shippers. All these market outlets are not available to every farmer, but the producer usually has the choice of at least two ways of disposing of stock.

Three different means of transporting livestock to market are available; river, railroad and highway transportation. The earliest movement of livestock was by driving. This method is no longer used, except to get livestock to country markets in a few isolated districts. Later, livestock was shipped by boat. Then boats were almost entirely supplanted by railroads, while

today the truck is being used to haul an increasingly large number of livestock to market. Farmers now use boats, railroads and motor trucks in transporting livestock to market.

There are 1,255 miles of navigable rivers in Kentucky, or more than in any other state. In the early development of the territory the rivers were important highways of commerce and the chief means for shipping livestock. With the shift in commerce of livestock from North-South to West-East during the last century and the development of railroads, river transportation gradually gave way to rail shipping, and then, during the last decade, as highways were built to accommodate motor-driven vehicles, even the river traffic that had survived in the territory untapped by railroads yielded to the competition of the motor truck. At present, market receipts by river are a negligible quantity and such a small part of the total that they are no longer classified as such, but as "driven-in" livestock, at the principal markets.

Railroads have provided the chief means of transportation for livestock for several decades and they are still the principal carriers. About 4,000 miles of railroad serve the principal agricultural sections of Kentucky. Several local areas, comprising hilly lands of relatively low productivity, are without any transportation facilities. Several county seats are not located on a railroad system. Motor transportation is considered a great boon by livestock farmers in these sections.

In the beginning transportation by motor truck replaced the hauling of livestock by team and wagon from the farm to the railroad. Later, as roads were developed and trucks were improved, the hauling of livestock was greatly extended until today such hauling for distances greater than 100 miles is not uncommon.

The development of transportation by motor truck has been dependent largely upon the condition of public highways. All roads in Kentucky were maintained by local units of government until 1920, when the General Assembly provided for a system of State-maintained highways. Since that time, highways have been greatly improved within the State, and the

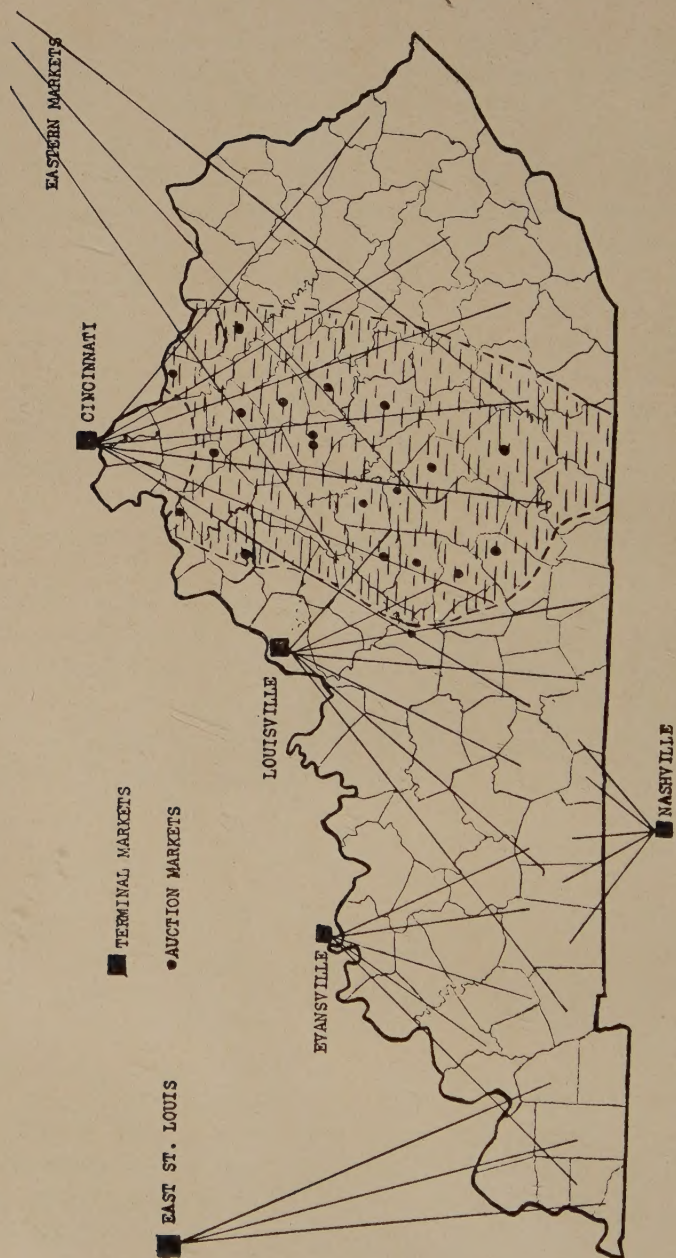


Figure 2. Terminal and auction markets readily available to Kentucky farmers.

mileage of roads maintained by the State has increased from 1,993 miles in 1925 to 4,407 in 1930 and to 5,808 by June, 1933. (See Table 1.) Large amounts of money have been spent by

TABLE 1. Road Mileage Under State Maintenance, by Types, on Dates Shown.

	Jan. 1, 1920	June 1, 1925	Jan. 1, 1930	Sept. 1, 1931
Grade and Drain	—	362.70	442.30	350.88
Gravel	—	422.89	1,225.43	823.60
Gravel, Surface Treated	—	—	—	323.07
Traffic-Bound Macadam	—	—	795.60	1,037.77
Traffic-Bound Macadam, Surface Treated	—	—	—	528.08
Surface Mix	—	—	115.39	359.00
Water-Bound Macadam	—	75.27	11.91	1.39
Water-Bound Macadam, Surface Treated	—	842.26	1,089.91	1,069.92
Bituminous Macadam	—	61.46	205.09	199.23
Rock Asphalt	—	139.75	193.52	338.54
Bituminous Concrete	—	20.97	20.98	20.98
Reinforced Concrete	—	62.87	301.91	745.59
Brick	—	5.20	4.50	4.53
Total	—	1,993.37	4,406.59	5,807.58

county governments on building and maintaining roads, there are yet roads inadequate for all-year travel by motor trucks. Farmers located on "country roads" frequently experience difficulty in using trucks during wet weather and spring. Until all-weather roads are built in these districts farmers will be obliged to market livestock either during the winter, while roads are frozen, during dry weather, or to use other means of transportation than motor trucks.

EXTENT OF TRUCKING IN KENTUCKY.

Trucking livestock to market has increased rapidly during recent years and is now an important factor in the shipping of livestock. In 1930, 34 percent, or 112,744 head, of livestock received at Cincinnati, Ohio, from Kentucky were delivered by truck. At Louisville, 67 percent, or 277,500 head, and at Evans-

ville, 86 percent were received by truck in that year. Detailed figures for Cincinnati and Louisville are in Tables 2 and 3. The receipts at Evansville could not be classified by states of origin, tho there did not appear to be any reason why the percent shipped by truck to that market should have been different for Kentucky as compared with other states of origin. Complete data could not be obtained for other markets to which Kentucky livestock is shipped, but sufficient information was procured to indicate that trucking is an important method of shipping livestock to them. There are also important differences in the percent of livestock of different classes that are marketed by motor truck. For example, truck receipts of cattle at Louisville amounted to 54 percent of all cattle received from Kentucky, whereas at Cincinnati only 17 percent of the receipts of cattle from Kentucky were delivered by truck; a similar difference was

TABLE 2. Receipts at Louisville from Kentucky, for 1930, Distributed According to Truck and Rail.

	Cattle		Calves		Hogs		Sheep		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Rail	26,174	46	31,804	40	51,713	35	26,953	21	136,644	33
Truck	30,988	54	48,054	60	95,963	65	102,435	79	277,500	67
Total	57,162		79,858		147,676		129,448		414,144	

found in shipments of hogs, for at Louisville 65 percent and at Cincinnati only 20 percent of the hogs received were trucked to market. Similar detailed information could not be obtained for Evansville but the author observed that a very large proportion of all classes of livestock was trucked to that market.

There are several causes for these differences in truck receipts. Probably the most important is the difference in density of livestock production in the market areas. The heavy livestock production in the area tributary to Cincinnati makes it relatively easy to assemble livestock for shipment by rail. The

development of relatively large local livestock markets in this area has, in part, offset this advantage of shipment by rail. Nevertheless, much of the livestock is still shipped in sufficient volume to Cincinnati to stimulate carlot shipping and much of the livestock concentrated at the auctions and destined for ultimate sale in Cincinnati is shipped by train.

TABLE 3. Receipts at Cincinnati from Kentucky, for 1930, Distributed According to Truck and Rail.

	Cattle		Calves		Hogs		Sheep		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Rail	68,262	83	22,774	54	68,580	80	58,854	49	218,470	66
Truck	13,769	17	19,041	46	17,501	20	62,433	51	112,744	34
Total	82,031		41,815		86,081		121,287		331,214	

Another important reason for differences in methods of shipping is the location of production of livestock with respect to markets. Intensive dairy and, to some extent, truck farming in the vicinity of Cincinnati has pushed the hog and beef cattle producing districts farther away from this market than at Louisville and Evansville, thus necessitating longer hauls. As the bulk of truck receipts generally originates within a radius of less than sixty miles of market, shipments by truck are necessarily less important at Cincinnati than at either of the other two markets. Moreover, because the market at Cincinnati is the oldest in the Middle West, it tends to attract livestock from a much larger area because of its reputation. Only for this reason some shipments to this market can be explained. Still other distant shipments, during recent years, can be explained only by the establishment of a cooperative sales agency which attracts shipments from local shipping associations controlled by livestock producers. The recent development of a producer sales agency at Louisville tends to offset this factor of the Cincinnati market.



Figure 3. Truck receipts at Cincinnati from Kentucky, by counties.



Figure 4. Truck receipts at Louisville from Kentucky, by counties.

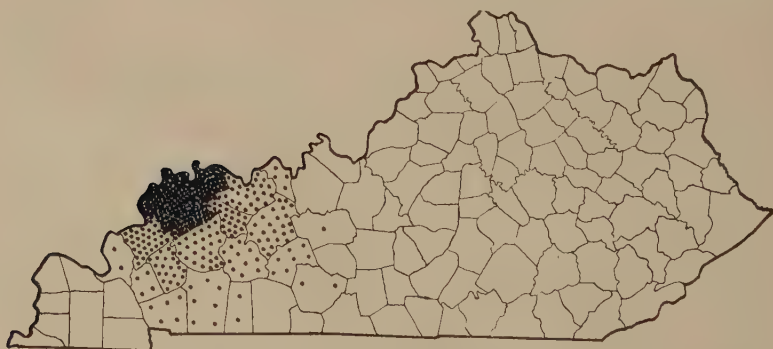


Figure 5. Truck receipts at Evansville from Kentucky, by counties.

TRUCKING AREAS OF TERMINAL MARKETS IN KENTUCKY.

Two important characteristics were noted in the analysis of the areas from which livestock was trucked to terminal markets. (See Figures 3, 4 and 5.) First, the shipments were greatest from nearby country points, particularly at Cincinnati and Evansville. Second, the trucking areas were clearly discernible for the different markets and overlapped each other only slightly.

Receipts at Cincinnati. Livestock was shipped by truck to Cincinnati from 71 counties of Kentucky but shipments from each of only 16 counties amounted to more than 500 head. Shipments from Grant County alone were 28 percent of the total, while from the six counties, Pendleton, Kenton, Bracken, Owen, Grant and Boone, all in the vicinity of Cincinnati, shipments amounted to more than 5,000 head each, or 79 per cent of all livestock trucked from Kentucky to the Cincinnati market.

The picture was changed only slightly when the counties were ranked according to the number of head of livestock trucked per square mile, perhaps a more equitable basis of ranking than number per county. The six leading counties, with the number of head of livestock trucked to Cincinnati per square mile, were: Grant, 119; Boone, 92; Kenton, 52; Pendleton, 48; Bracken, 32; and Campbell, 29, the six counties nearest to Cincinnati. (See Table 4.) The bulk of the livestock shipped by truck, therefore, originated within a comparatively short distance of the market: 28.6 percent came from within a radius of 15 miles; 76.7 percent, from within a radius of 30 miles, and 96.2 percent from points not to exceed 60 miles from the market. For receipts from greater distances see Table 5.

Different species in the truck shipments from different parts of the trucking area had a relative importance depending chiefly on the amounts that are produced. For example, hogs, which represented a highly specialized farm enterprise near Cincinnati, originated chiefly from within a fifteen-mile zone of the market. Nearly 60 percent of the sheep originated from within the second fifteen-mile zone, a region well suited to grazing. Cattle and calves came from greater distances in larger numbers. Prob-

TABLE 4. Number of Head of Livestock Per Square Mile and Shipments to Cincinnati During 1930.

County	Total Head Per Sq. Mile	Number Shipped by Truck to Cincinnati	Total Number Shipped to Cincinnati	Zone
Grant	304	119	131	2
Boone	182	92	92	1
Kenton	147	52	52	1
Pendleton	183	48	54	2
Bracken	136	32	34	2
Campbell	104	29	30	1
Gallatin	199	25	132	2
Owen	278	15	15	3
Harrison	415	14	39	3
Carroll	181	13	14	3
Robertson	237	9	9	3
Trimble	110	4	4	3
Scott	329	4	30	3-4
Fleming	186	2	19	4
Montgomery	164	1	33	4-5
Fayette	287	$\frac{3}{4}$	115	4
Clark	306	$\frac{1}{2}$	28	4-5
Bourbon	446	$\frac{1}{2}$	63	4
Madison	141	—	38	5
Mason	225	—	58	3
Boyle	232	—	71	6

TABLE 5. Truck Receipts at Cincinnati from Kentucky, by 15 Mile Zones. Expressed in Percent of Total Truck Receipts.

Distance from Market	Cattle	Calves	Hogs	Sheep	Total
Less than 15 miles	27.3	29.4	49.1	22.8	28.6
15-29	39.3	39.8	25.1	59.1	48.1
30-44	24.4	20.1	11.1	16.3	17.1
45-59	5.6	2.7	4.0	1.1	2.4
60-74	1.3	1.8	0.2	0.2	0.6
75-89	1.0	2.3	0.3	0.0*	0.6
90-104	0.2	0.8	1.4	0.0*	0.4
105-119	0.7	2.5	6.3	0.1	1.5
More than 120	0.2	0.6	2.5	0.4	0.7

*Truck receipts of sheep from these zones were so small that the percent was not included in the table. Only .02% of the truck receipts of sheep were received from the 75-89 mile zone while only .004% were received from the 90-104 mile zone.

ably a larger proportion, especially of cattle, calves, and sheep, would have been trucked from more distant regions if it had not been for the auction markets of Central Kentucky which assemble all species in quantities that stimulate shipping by rail. These auction markets also reduce the amount of livestock that would otherwise go to the Cincinnati market from a region of heavy livestock production.

Receipts at Louisville. Altho it was impossible to make as detailed a study of receipts at Louisville as at Cincinnati, sufficient data* were available to give fairly accurate information concerning the points of origin of receipts. Livestock was received by truck from 53 Kentucky counties during the three-months' period that was studied. (See Figure 4.) Shipments from each of 34 counties amounted to more than 500 head during the period, while receipts from each of 15 counties amounted to more than 5,000 head. It was impossible to figure the relative importance of the counties as shippers of livestock to Louisville, because of the incompleteness of the data.

The largest percentage of livestock trucked to the Louisville market, as at Cincinnati, originated within a radius of 20 to 60 miles. However, considerable livestock was trucked from a narrow strip along highways, U. S. 31 E and U. S. 31 W, reaching to the southern boundary of the state. Within a radius of twenty miles from the market vegetable production and dairying are more profitable than livestock production, while in sections more than 60 miles distant, other markets compete for livestock, rail transportation is used to a greater extent and road conditions to market are not so favorable.

One of the most striking conclusions to be drawn from the comparison of the Cincinnati and Louisville truck areas (See Figures 3 and 4.) is the sharp demarcation between them. Shipments are common to both markets from only a narrow belt. A detailed study of the trade territory of the different species of livestock showed that the demarcation is even more pronounced

*Point of origin in Kentucky for truck receipts was available for May, June and July, 1931, only. During this period the bulk of the sheep and lambs were received, and the peak movement of hog receipts was reached. Cattle and calf marketings, however, were only average. No data were available on the points of origin of rail receipts from Kentucky.

for cattle, calves, and hogs than Figures 3 and 4 indicate. Overlapping of market areas is principally in the marketing of lambs for which there is the keenest inter-market competition. Farmers appear to study lamb markets carefully and, in the areas most easily accessible to both Louisville and Cincinnati, to ship to the most favorable market. This practice results in shipments to both markets.

About midway between Louisville and Cincinnati there was some overlapping of market areas due to the condition of the roads. In the absence of improved highways which would make these central markets equally accessible in all weather, livestock was shipped to one market at one season of the year and to the other at another season when roads were more favorable. Amount of livestock marketed, toll of bridges, amount of traffic in central market and the like are also important factors that affect the patronage of both markets, by farmers in this territory.

Receipts at Evansville. During 1930, 86 percent of all livestock was delivered at Evansville by truck, 10 percent by rail and 4 percent by boat. For the first ten and one-half months of 1931, for which market receipts by state of origin were available, practically all the calf, sheep, and lamb receipts from Kentucky were delivered by truck, and at least 90 percent of the cattle and hogs.

Livestock was received at this market from 20 counties of Kentucky during the period for which data were available. The distribution of these receipts is shown in Figure 5. Receipts from each of 15 counties amounted to more than 500 head, while receipts from each of six counties amounted to more than 5,000 head. As in the other markets studied, a very large proportion, 92 percent, of the truck receipts came from within a radius of 60 miles. The most outstanding characteristic of this market, as compared with the other markets studied, was the large percentage of livestock that originated from within a distance of 20 miles, a much larger proportion than at either Louisville or Cincinnati. Louisville and Cincinnati each commands livestock from a much larger territory than Evansville. Moreover, be-

cause of larger populations, they have stimulated dairying and vegetable gardening to a greater extent. Under these circumstances it is only natural that livestock is produced closer to the Evansville market than to either of the others studied.

There is a sharp demarcation between the territories served by the Louisville and Evansville markets, as can be seen from a comparison of Figures 4 and 5. The location and condition of the highways in these sections of the state do not enable farmers and trucking companies to patronize both markets. The condition of the roads from the eastern part of the Evansville territory to Louisville was poor at the time this study was made, and it was necessary to cross the Ohio River into Indiana. Deliveries of livestock at Louisville over this route would necessitate the payment of two tolls, whereas only one would be required if the stock were taken to Evansville. While development of better roads in this section may change the territories served by the two markets somewhat, stock produced closer to Evansville will probably continue to be taken there, while stock produced nearer Louisville will be sold at that market. In the final analysis, the distance from market, where other things are equal, must determine to which market stock is taken for sale.

ORGANIZATION OF THE TRUCKING BUSINESS.

Truckers of livestock can be divided into three groups: farmers, contract operators and public carriers. A few farmers own trucks with which to transport their products to market, and some do commercial trucking, during spare time, in order to pay for the truck and to supplement income from the farm. Generally speaking, operators of this type do not give as satisfactory service as regularly established trucking companies. Often their trucks are not well equipped for protection of livestock en route, nor are they always available when needed. Furthermore, farmers who haul for neighbors seldom if ever assume financial responsibility for loss from death or crippling of animals. However, this type of trucker usually does not charge as high rates as commercial concerns.

A contract trucker usually operates one truck and hauls

any kind of freight anywhere and at any time that he is called upon for service. Usually these men have well-equipped trucks for transporting livestock which are available when needed. Many have connections in central markets where they can purchase supplies and deliver them at farms, thus rendering additional service to patrons. They generally observe no schedule of rates and each load or part of a load is bargained for at rates usually higher than those charged by farmer truckers. Most truckers of this class do not carry insurance or assume responsibility for safe transportation of loads, whether livestock or merchandise.

In contrast are the public carriers, so called because they are well-organized companies, often operating fleets of trucks, covering regular routes and having fixed schedules of rates. These companies have better trucks than the other types of truckers, more adequate equipment for care and protection of stock en route, drivers who take better care of stock, and provide insurance against loss of animals by death or crippling. Public carriers give livestock producers superior service but charge more than truckers of the other types.

With a possible choice between these different types of trucking, farmers are confronted with the problem of procuring satisfactory service at the least cost. Many producers of livestock feel that by using farmer-owned trucks they get good service at lower rates, altho they have to assume responsibility for any loss en route to market. On the other hand, some producers prefer to use established trucking firms because they are better equipped to handle stock en route and take the responsibility for loss or damage to animals in transit.

SOME PROBLEMS OF LIVESTOCK TRUCKING.*

Probably the foremost problem of the truck operator is procuring business to keep the truck and the operator busy. It is especially difficult to obtain sufficient volume if there is special-

*For the purposes of this study a survey was made of truck operators, in 10 counties of the state, divided according to markets served: Cincinnati 6, Louisville 10, and Evansville 5. Interviews were had with all classes of truck operators, from the farmer hauling for neighbors to established truck lines operating 21 trucks.

ization in hauling a single class of commodity, as livestock, even in the chief livestock-growing communities, and very few truck-

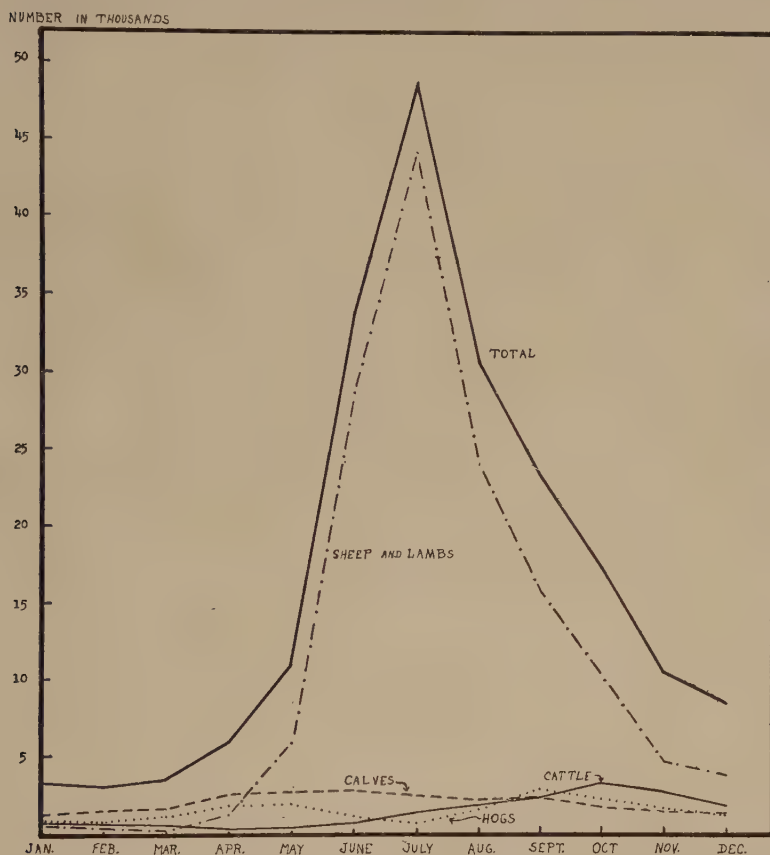


Figure 6. Monthly truck receipts of livestock by classes, at Cincinnati, from Kentucky.

ers have found it possible to engage in livestock trucking exclusively. It is, therefore, necessary to haul many kinds of merchandise in order to keep trucks operating most of the time, even the chief consideration is given to livestock.

Seasonality in marketing livestock is one of the chief reasons for difficulty in procuring sufficient volume of livestock to keep trucks operating at capacity. Figures 6, 7, and 8, showing the

monthly receipts of livestock at different markets, indicate the nature of the problem. Altho the movement of the different

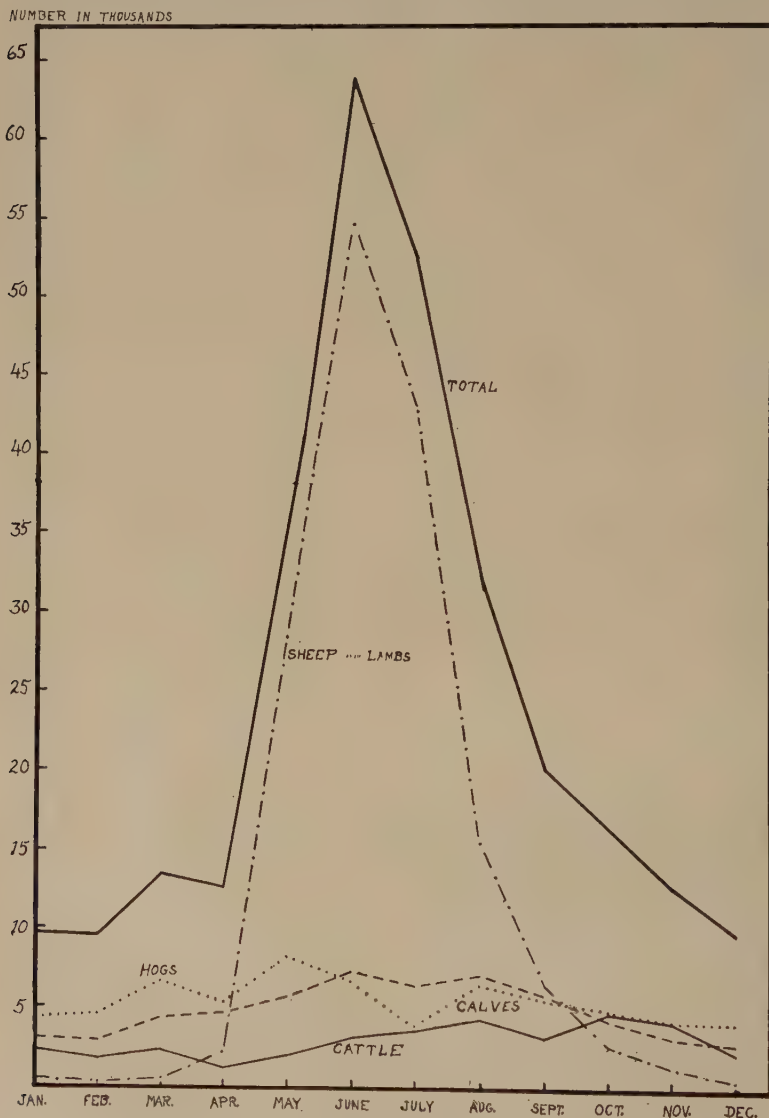


Figure 7. Monthly truck receipts of livestock by classes, at Louisville, from Kentucky.

species tends to reflect the methods of production and is distinctly seasonal in character, the combined receipts of cattle, calves, and hogs make a fairly uniform movement. Lambs, however, are marketed during a much shorter period and, as they

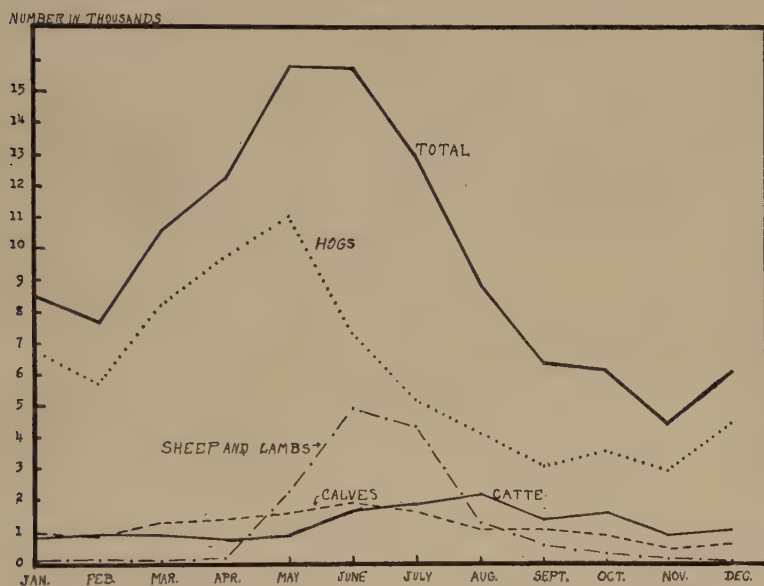


Figure 8. Monthly market receipts at Evansville, from Kentucky.

comprise a larger percentage of receipts at both Louisville and Cincinnati, there is a distinct problem in transporting them to market when they are ready.

The problem is especially acute at Louisville where the lamb-marketing season is short and heavy receipts coincide with relatively heavy marketing of other classes of livestock. On the other hand, lambs are a smaller percent of the total annual truck receipts at this market than at Cincinnati, as will be seen by comparing Figures 6 and 7, and the receipts of cattle, hogs and calves at Louisville during the early and late months of the year are larger than at Cincinnati, thus tending to make the trucking problem thruout the year less difficult at that market.

Because hogs comprise the bulk of the receipts at Evans-

ville, and because the market receipts of hogs are more evenly distributed over the year than lambs, the movement of the combined classes at this market was more uniform than at either of the other two markets studied, and in a considerable measure reduced the seasonal variation in demand for transportation facilities.

Seventeen times as many head of livestock were received by truck at Cincinnati in July, the month of peak receipts, as in February, the month of low receipts. At Louisville the difference between the high and low receipts was not so great although receipts were six and one-half times larger in June than in January. At Evansville the May receipts were four times larger than those in November. A true comparison between the demand for trucks for the two periods must recognize, however, the space required in trucks for different classes of livestock. A lamb requires less room on a truck than a head of any other species. Consequently the requirements for trucking peak loads when lambs constitute the bulk of receipts are somewhat reduced, but they are still much larger than when the number of livestock marketed is small. The requirements at Cincinnati were still eight times as great in July as in February, and at Louisville and Evansville about three times as many trucks were required to transport livestock to market during the month of largest receipts. The seasonal movement of livestock thus creates a real problem for truckers. It is fortunate indeed that in many localities they are able to haul tobacco in winter, when market receipts of livestock are small.

Getting capacity loads is another problem that causes livestock truckers a great deal of trouble. Consignments are generally small in a mixed farming area like Kentucky, where flocks and herds are relatively small and where farmers follow the practice of culling. Moreover, as local livestock markets disappear, because of trucking, farmers consign by truck many small lots of livestock which would otherwise be sold to country traders.

The consignments of livestock shipped by truck to Cincinnati in 1930 averaged 2.3 head of cattle, 1.6 head of calves, 7.4

head of hogs and 13.5 head of sheep and lambs. Consignments of this size are far below the load requirements of typical trucks. Economy in shipping necessitates trucking plural-ownership loads of livestock. This necessitates collecting the load from several farms, with increased time en route and, often, long delays in loading which cause stock to reach market late and, sometimes, in poor condition. Truckers are endeavoring to meet this problem in various ways such as having farmers bring their stock to a central loading place or collecting stock with small "pick-up" trucks, neither of which has proved very satisfactory. Shipment of stock belonging to different owners also necessitates marking each consignment separately, or in some way of maintaining the identity of ownership of each consignment so that each owner will receive correct compensation for his stock.

In order to get a satisfactory load it is often necessary to accept livestock of different species which must be separated while en route in order to avoid injury and loss. Here again truckmen are meeting these problems in various ways and apparently more satisfactorily than those mentioned in the preceding paragraph.

Some truckmen find it necessary to supplement the income derived from hauling by offering other types of service. Formerly the most common service offered was that of "livestock trader." This method of disposal enabled the farmer to shift the risks of marketing and to receive immediate payment for his stock. However, as the practice increased the hazards of the trucking business it soon disappeared. At present most truckmen, especially contract truckers, endeavor to supplement their income by providing for return loads. To do this they offer farmers the services of a merchant, buying supplies in the city and delivering them to farms. The truck operator generally does not plan to make a profit on buying and selling the merchandise, nor to charge for the service of buying, but charges only for transporting the return load. Stock feed is the commodity most often purchased, while groceries, hardware, seeds, fencing, fertilizer, roofing, machinery, coal, hay, ice, lumber and other building materials, and straw follow in the order given.

Quantities of these commodities carried vary considerably; while many farmers order only a sack of feed at one time, others may purchase it by the ton.

Various methods of financing such purchases are used by truck operators. The most common is to handle them on a cash basis; the operator purchases the supplies and collects for the goods, including a trucking charge, upon delivery. Where truck drivers are well acquainted with farmers and able to finance purchases, credit is often extended, but usually for a period not to exceed thirty days. In such instances a bill is mailed on the first of the following month for all goods bought, plus the hauling charges. Some truck operators have become so heavily involved by this practice and so considerably embarrassed that they have been obliged to insist on cash business.

Another method of handling purchases of farm supplies in some communities is for the truck operator to establish contacts with merchants from whom farmers who accompany the trucker to market, may buy. The driver is then responsible for the hauling only. Or, if a farmer is unable to accompany the driver to market, he may order the goods thru the truckman and give him a signed blank check to pay for the goods. This practice cannot be recommended, however, as it is an unbusiness-like method of handling supplies. A much better way, and one used almost as much, is for the farmer to order the merchandise by telephone and send a check by the truck driver as payment. In a few instances farmers have established credit with city merchants from whom truck operators may obtain supplies on account.

Many truck operators have developed return freight routes in order to take advantage of the movement of goods from jobbing centers to country points. Rates on these back hauls are often considerably below existing freight or express schedules and also lower than those charged for hauling livestock and other products to central markets. In this manner country merchants often obtain door to door delivery at a considerably reduced rate.

Practically all truck drivers interviewed in this study were willing to have farmers ride to market with them, especially

when they were shipping stock. Some drivers found it necessary to limit passengers to those accompanying stock shipments, in order to accommodate owners of livestock. The practice of encouraging stockmen to accompany shipments appears to be growing among truck operators, as this enables the producer to see his stock sold and also to become better acquainted with market conditions and requirements. On the other hand, there are drivers who discourage this practice, because of the law which requires drivers to be responsible for passengers. This is especially true of truck operators who do not carry insurance.

Another important problem that confronts truck operators is the risk of loss from injury or death of livestock. There was a lack of agreement among operators and apparently much misunderstanding of their legal responsibilities for such losses. There was also much variation in the practice of handling the losses. Eighty-six percent of the truck operators interviewed said that they were responsible for stock in case it died, was killed or crippled en route to market. The others maintained that they were not responsible for such losses, and in one instance the sign "not responsible for cargo" was painted on the truck. A few operators have taken the viewpoint that they were responsible for stock except when the owner accompanied his shipment; then the responsibility was shifted to the owner of the livestock. As a protection against financial loss from these risks, 38 percent of the truck operators carried cargo insurance, which covered damages in case of wreck or fire, and 25 percent carried insurance against death or crippling of animals from any cause. Those operators carrying insurance, with one exception, had three or more trucks under their supervision. The excepted operator required farmers to pay for the insurance or specifically told them that they would be responsible for losses, altho under the policy the operator was required to pay any losses and could collect compensating damages from the insurance company.

Truck drivers who did not carry insurance generally maintained that it was less expensive to incur the risk of damage than to carry insurance. Several drivers who had been trucking for five or more years insisted that the loss due to death or

crippling was so small that they could better afford to pay necessary damages than insurance premiums. The general opinion among drivers was that if stock was properly fed before loading and carefully handled in loading, most of the danger of loss by death was eliminated. Good equipment, careful driving, proper bedding in the truck and no over- or under-loading appear to be the important factors which reduce losses by crippling. Some operators also felt that the loss by death or crippling could be substantially reduced by the use of a proper loading chute; in fact the use of a well-constructed chute was considered so important by some operators that they now carry this equipment.

Regardless of how the operators handled the problem of losses it should be pointed out that, according to common law practice, truck operators hauling livestock, as well as other commodities, for hire are liable for losses incurred while the livestock is in their charge, the same as any other common carrier.* This requires the truck operator to exercise ordinary care and protection of livestock while in his care and should loss occur because of any negligence on his part he would be held responsible for it. On the other hand, if loss should occur because of an "act of God" or inherent diseases, etc., or things outside of his control, he would not be responsible.

At the meeting of the Kentucky General Assembly of 1932, as a further protection to shippers, a truck law was passed which requires truck operators to carry insurance to protect the shippers against loss. The administrators of law have interpreted this section as follows: "All common carrier trucks are required to deposit insurance policies covering personal liability, property damage and cargo. Contract carrier trucks are only required to carry personal liability and property damage policies."*** This interpretation, however, does not lessen in any way the responsibility of the contract carrier truck for cargoes carried.

*Cincinnati, New Orleans and Texas Pacific Railway Co. vs. Smith and Johnson, 155 Ky. 481 (1913). Farley vs. Lovary, 107 Ky. 523, 54 S. W. 840, 1900. Gess vs. Wilder, 237 Ky. 330, 36 S. W. 2d 617, 1931.

***"Things that are Necessary for Truck Operators to do Under the Law." Issued by the State Tax Commission, Department of Motor Transportation, Frankfort, Ky.

WHY LIVESTOCK PRODUCERS PATRONIZE TRUCK OPERATORS.*

The advantages of transporting livestock to market by motor truck, as stated by farmers, may be summarized under the following five heads: 1. Dispatch of service. 2. Convenience of service. 3. Economy of service. 4. New market outlets furnished. 5. Better understanding of market requirements and market conditions.

Most livestock producers felt that the rapidity of marketing livestock by motor truck was of the greatest advantage. The fact that it is possible to get trucks at any time, day or night, was considered a distinct advantage over other types of transportation. Another advantage is that the livestock producer can wait for the closing quotations on a day's market, order a truck and have stock on the market the next morning, a contrast to the old way of ordering a freight car a day or more in advance and not knowing what the market price may be. A farmer who lives close to market or owns his own truck can get opening quotations on a day's market, by telephone or radio, and take his livestock to market the same day. The flexibility of motor truck schedules, also, permits hauling at night during hot weather. This is undoubtedly better for stock, especially lambs and hogs.

The method of handling livestock when shipped by motor truck also expedites marketing. Livestock is loaded onto the truck at the farm, transported to market, unloaded and sold. Thus much time spent in handling the stock at the railroad station, waiting for trains, and stops en route is saved. In the opinion of many farmers this speed brings animals to market in better condition and with less shrinkage. Stock undoubtedly does arrive at market fresher but whether the shrinkage is less is doubtful, for no data are available on this question. Because of the lack of knowledge concerning these factors some buyers have discriminated against trucked-in stock, altho in recent years this prejudice has largely disappeared and buyers are now more disposed to accept stock delivered by truck.

*The discussion of this section and the following section is based on interviews with 169 livestock farmers.

Convenience was another advantage of truck transportation mentioned by many farmers. Under convenience may be grouped such services as delivery direct from farm to stock-yards, reduction of farm labor otherwise required in local marketing, practicability of shipping a few head when ready for market, possibility of accompanying stock to market, and opportunity to purchase farm supplies at central markets. Some farmers felt that the truck was a more expensive method of transporting livestock to market than some other available means, but they were willing to pay the higher charge because of the greater convenience.

Collecting livestock by truck at the farm is of distinct value to farmers. This is perhaps the greatest advantage, compared with other means of transportation. Where local highways have heavy traffic, it is often impractical, if not impossible, to drive stock from the farm to the local market or railroad station. Again, if the farmer wishes to haul the stock by horses and wagon, a special wagon rack is required, besides horses and farm labor. Because of congestion on local highways and the cost of farm labor, many farmers thought that the commercial motor truck was the best means of getting livestock to market.

Stock shipped by motor truck is handled less than that shipped by rail, is on the road a shorter time, and is given better care. Consequently, losses from death and crippling are low. It is possible, for example, to care for animals whenever they are found to be suffering from extreme temperatures. Even with the closer supervision stock receives when transported by truck there is, of course, some loss by death and crippling but this is often caused by negligence on the part of the driver, or by poor equipment, or by lack of proper equipment for loading and protection of animals. These defects, in most cases, could be overcome if farmers would insist on the use of well-equipped trucks that are in good repair and driven by careful drivers.

Kentucky farmers seldom have a full carload of livestock ready to market at one time. By using motor trucks, a producer is able to ship stock in small lots whenever it is ready. Furthermore, if producers can cull their stock and ship when it is in the

best market condition a better price can be obtained than when stock must be shipped all at one time. Often, it is impractical for the small producer to ship to terminal markets unless he can combine his stock with that of his neighbors. Where this can not be done the farmer is forced to sell to local buyers. The truck enables the small producer to ship livestock to terminal markets, if he does not like the prices offered locally, and has made additional market outlets for many small producers.

Many farmers prefer to ship by motor truck because they can accompany their livestock at little or no expense, and doing so often proves of great advantage. The producer becomes better equipped to meet market requirements by watching stock sold, by discussing with buyers the merits of various pens of livestock, and by acquaintance with existing conditions at the market. The producer also becomes better acquainted with the commission men who handle stock, which tends to eliminate the usual criticisms of terminal markets. In addition, commission men are stimulated to greater endeavor when they know that the producers of livestock are present. Also, by accompanying the shipment to market, the farmer usually is able to get payment quicker. Again, many farmers find it to their advantage to go to the terminal market to purchase feeder stock, since the same truck usually can take what he buys back to the farm. Furthermore, many farmers have found that they can purchase farm supplies at a saving in the larger market centers. This is not only an advantage to the farmer but to the truck operator, as it furnishes him a return load.

No comparison of actual costs of marketing livestock by motor truck and by other means of transportation was made in this survey. Many farmers, however, thought that the actual cash expense of marketing livestock by motor truck was greater than by other methods, but that the saving of the producer's time and the expense of hired labor, the reduced shrinkage and the elimination of extra handling in shipping by rail, would more than offset the increased cash outlay.

**CRITICISM OF THE USE OF THE MOTOR TRUCK IN THE
TRANSPORTATION OF LIVESTOCK TO MARKET.**

Despite the important advantages of marketing livestock by motor truck many farmers felt that the service of trucking could be greatly improved by the introduction of better equipment, modern business methods, and efficient handling. There was also a preponderance of opinion in favor of public supervision of rates, better roads and the discontinuance of the "dock" in prices on certain classes of livestock because of delivery by motor trucks. The lack of proper equipment was the most common cause of complaint against motor truck service. Inadequate loading facilities and equipment to protect stock during inclement weather, use of insufficient equipment when a truck was double-decked, and the general run-down condition of trucks were points mentioned under this heading. Most truckers depend upon farmers to furnish a loading chute, since a satisfactory chute is too cumbersome to haul from farm to farm. However, many truckmen keep their equipment in good condition and have the necessary equipment to meet all common requirements. It devolves, therefore, upon farmers to correct faults of the ordinary truckmen by hiring only those who render first-class service.

Some producers complained that many truckmen do not use proper methods of handling livestock. However, some of this criticism was often from farmers making unreasonable demands. For example, a farmer hired a truck with a capacity of 30 or 35 lambs, but insisted on loading 40 lambs. This caused overcrowding and increased liability of crippling or killing some of the animals, as well as damaging the truck. Besides, overloading increases the chance for breakdown and delay. Of course, the producer should have hired a truck of sufficient capacity. Again, many farmers maintained that drivers do not protect animals en route to market as carefully as is necessary for safe delivery. Rough treatment in loading, mixing different species without adequate protection of the smaller animals, long hauls over rough roads to get a full load, and lack of proper

bedding are details which can be cared for if both farmers and drivers cooperate.

Failure to identify the ownership of animals properly, delivery to the wrong consignee, and inaccurate and incomplete records are more or less common among truck operators and cause dissatisfaction among shippers. With proper care, animals could be marked and a description of the stock and the consignee could be issued in the form of a bill of lading or receipt. Failure to follow approved business methods in this respect exists more often with inexperienced truck operators than with old established truckmen or trucking companies.

The prejudice shown by buyers against stock delivered by truck is gradually being overcome. The policy among buyers of "docking" in price which was common on nearly all markets a few years ago has been abolished at all except one important market where Kentucky farmers market stock. At Evansville the practice of paying \$1.00 per 100 pounds less for sheep and lambs delivered by truck still exists. This practice will doubtless disappear entirely as farmers realize that it does not pay to improperly feed and water animals prior to sending them to market, which was, in most instances, the cause of this price policy.

The services rendered farmers by truck operators in the different market territories, varied somewhat according to the extent trucking had been developed within the territory. The services given by the truckers in the Cincinnati territory were much more extensive than in either of the other territories studied. Practically every farm in the territory south of Cincinnati was on a regular truck route, covered at least twice weekly and often daily, except Sunday. Truckers in this territory also had developed the back haul to such an extent that many farmers now depend on the truck driver to purchase and deliver practically all kinds of farm and home supplies.

In the Louisville market territory farmers were buying farm supplies thru the truck drivers to a considerable extent but purchased very little, if any, groceries or home supplies thru them. Perhaps, this was because most farms were not located

on regular truck routes. Country roads were less well developed which made it impractical, at least part of the year, for truckmen to establish and maintain routes and schedules. Roads in the Evansville territory generally were not so good as those in either of the other territories studied and for this reason trucking has not developed so rapidly. In fact only a few regular routes, along the main highways, have been established. Very little if any back haul service has been developed.

Whether this development of purchasing farm supplies thru the truck operators is a permanent and satisfactory arrangement remains to be seen. It is having its effect on country stores. Both their volume and percentage of cash sales are being reduced. Many farmers purchase thru the truck operators when they have cash and thru the country store when credit is needed. What changes, advantageous or otherwise, will result cannot be foreseen at this time.

TRUCKING RATES AND MARKETING CHARGES.

A detailed study of trucking rates was not made because data obtainable was not adequate. Sufficient information was obtained, however, to furnish the basis for the following generalizations. There were no standardized rates for trucking livestock from farms to markets. Most truck operators had what was considered a minimum charge from the immediate locality, but the charge was varied according to distances and road conditions. Often the operators charged farmers "what the traffic would bear;" if a farmer had considerable hauling to be done, a special rate was made to get his business. Commercial truckers just starting into the business or farmers doing trucking in spare time were more inclined to vary rates than the established truckers or the companies operating several trucks.

Competition within an immediate vicinity and road conditions were more important in affecting rates than distance from market. Many instances were noted where rates were materially less in communities located 30 to 40 miles from market than in other communities only 20 to 25 miles away. In communities

more distant from market, competition among truckers, for business, was the dominating factor in establishing rates, while in sections closer to market, generally not so many trucks were available, and rates were more stable. Competition among truckers, for business, has caused some farmers to "bargain" with drivers. This practice, in turn, caused many truck operators to reduce rates to such an extent that adequate service could not be rendered, such as keeping trucks in repair and furnishing extra equipment for the protection of livestock en route. Some drivers overloaded and crowded stock in order to get loads sufficiently large to enable them to make a profit.

Most trucking companies which operated several trucks and had well-organized businesses had developed a schedule of rates to which they adhered. On the other hand, contract truckers and farmer truckers tended to cut rates in an endeavor to get business. Sometimes the revenue derived from hauling only slightly exceeded the actual cost of gasoline and oil and left little or nothing for wages, depreciation, and profit. Farmers, in many sections, realized that seldom was it good policy to hire the trucker who hauls for the lowest rate, but insisted that the stock be well cared for en route to market and transported only on trucks that were in the best condition.

Different methods of charging for hauling existed for different species of livestock. Rates for hauling cattle and hogs usually were based on a weight charge, of so much per hundred pounds. For short hauls, however, and in the district south of Evansville, the charge was made "by the load" and farmers were allowed to use their own judgement as to the amount of stock loaded. Trucking rates on calves and sheep were per head. Truckers were prone to overload lambs in order to get as large revenues as possible.

The charges for hauling were a larger proportion of the marketing costs of calves than of most other classes of livestock. This was because producers seldom shipped more than one calf at a time, consequently truckers, in order to get a load of calves, had to visit several farms and then perhaps make the trip to market with less than a full load. Very few producers shipped

a full truck load of stock at one time. This was brought out clearly by the average consignment of truck receipts at Cincinnati during 1930. The average consignment of calves was 1.6 head, of cattle 2.3 head, of hogs 7.4 head and of lambs 13.5 head. This illustrates the necessity of combining shipments from several farmers in order to permit a truck operator to operate profitably for himself, and to reduce rates.

In the Cincinnati territory truckers charged by the head to transport cattle for distances of less than thirty miles, while for greater distances the charge was based on weight. Hogs were charged for by weight, and sheep, lambs and calves, by the head. Rates which prevailed in the Cincinnati territory during the summer of 1931 were as follows: cattle, for distances less than 27 miles, \$3.00 to \$4.00 per head; for greater distances, 40c per hundred pounds. The rates on calves were fairly uniform at \$1.00 per head, regardless of length of haul, altho for distances greater than 33 miles there was some tendency to increase charges slightly. Hog rates, also, were fairly uniform at 40c per 100 pounds, regardless of length of haul. Rates on sheep and lambs ranged from 20c to 50c per head, the rates most commonly charged being 25c or 30c per head. For lambs there was more of a tendency to increase the rate with increased length of haul than with any other type of livestock.

Truck rates at Louisville were more uniform than at Cincinnati and they were also slightly lower, notwithstanding that the average length of haul was greater. The common rate for cattle was 35c per 100 pounds for distances up to 70 miles. Only a few rates were noted beyond that distance. Rates on calves were the same as in the Cincinnati territory, or \$1.00 per head, altho the haul was considerably longer. There was a tendency, however, to increase the rate for hauls of sixty miles or more. With both hogs and lambs, also, there was a tendency to increase rates as the length of haul increased. For hogs, 25c per 100 pounds was the common rate for hauls of less than 38 miles, and 35c for hauls between 38 and 65 miles, while for 70 miles and over, 40c per 100 pounds prevailed. Lamb rates were 25c per head for hauls less than 40 miles, and 30c for hauls between 40 and

70 miles. The common practice was to charge 40c per 100 pounds for distances between 80 and 100 miles and 50c per 100 pounds for distances above 100 miles.

Trucking rates on livestock in the Evansville territory were not so uniform as at either of the other two markets studied. The main causes of the variations were that trucking was less commercialized, road conditions were not uniformly so favorable as at the other markets, and ferry tolls were more often a necessity. Hog and cattle rates most common for hauls up to 45 miles were 40c per 100 pounds. Calf rates varied considerably but for distances below 32 miles 75c per head was the common charge while for longer hauls the charge was \$1.50 per head. The common rate on lambs was 50c per head, regardless of distance.

At each terminal market studied yardage charges for trucked-in livestock were higher than for livestock arriving by rail. At Louisville the charges on driven-in livestock were higher by the following amounts: cattle 5c per head, calves 4c per head, hogs 3c per head, and sheep and lambs 2c per head. At Cincinnati the yardage charge for livestock delivered by truck was higher for cattle and calves by 5c per head and for hogs, sheep and lambs by 2c per head. At Evansville the yardage charge on livestock delivered by truck exceeded those on stock arriving by rail as follows: cattle 5c, calves 5c, hogs 2c and sheep 1c per head. Terminal market charges must be approved by the administrators of the Packers and Stockyards Act under which all charges are supposed to be fair and reasonable.

Commission charges for trucked-in livestock were slightly higher at Cincinnati and Evansville but at Louisville they were practically the same as for less than carload lots of livestock delivered by rail. Rates for trucked-in stock at Cincinnati, Louisville and Evansville are given in Table 6.

Feeding was another marketing cost. Feeding at terminal markets was at the option of the owner but the common practice was to feed all livestock arriving by rail, while livestock received by truck was not fed. At Cincinnati all livestock which arrived by truck before 7 A. M. was fed. Thus, the cost of feed

TABLE 6. Commission Rates for Selling Less than Carload Lots of Livestock Delivered by Truck. In Effect June 1, 1932.

	Cattle	Calves	Hogs	Sheep
Cincinnati	90c per head	1 head 60c 2-10 head 50c each 10-60 head 40c each Maximum \$22.00	1-3 head 50c each 4-20 head 40c each Maximum \$6.00 21-70 head 30c each Maximum \$14.00 70 and over 20c each Maximum \$22.00	1 head 50c 2-4 head \$1.00 5-20 head 25c each Maximum \$4.00 21 and up 20c each Maximum \$14.00
Louisville	75c per head	35c per head	1 hog 25c 2 and up 15c each	1 lamb 25c Less than 67 head 15c each 67-100 head \$10.00 per lot More than 100 head 10c per head
Evansville	1 head \$1.00 2 head \$1.50 3 head \$2.25 Each additional head 75c	35c per head	1-4 head 25c each 5 head \$1.00 6-12 head 20c per head additional 13-16 head \$2.50 17-40 head 15c per head additional	20 head or less 15c each Maximum \$2.50 More than 20 head 10c per head additional

must be added to the cost of marketing stock by rail while the producer who marketed his livestock by truck escaped this expense. There was a difference of opinion among farmers as to the net effect of feeding practices on shrinkage and the relative cost of rail and truck shipments. Some thought that because of the practice of feeding rail receipts, shrinkage was less than on truck shipments. Other farmers stated that buyers discriminated against livestock that was fed and watered at terminal markets. No data were obtained relative to either of these contentions.

REGULATION OF MOTOR TRUCK TRANSPORTATION.

Most states have laws regulating size of trucks and size of loads, but very little has been done toward the regulation of services rendered by motor trucks or their operation. The trend of public control during the past few years has been toward regulation of equipment, rates charged, and the supervision of accounting systems. The states of Iowa and Ohio have the most stringent laws regulating the operations of motor trucks and requiring the closest supervision of service rendered by them. Bills for the regulation of motor transportation have been introduced in at least 44 state legislatures in the last two years but more than half of them failed of enactment.

At its 1931-32 session, the General Assembly of Kentucky passed a law to regulate trucking. This law provides that no motor truck shall be operated for hire for the transportation of property unless the operator has obtained a license from the State. The law applies to two types of truckers, contract carriers and common carriers. When making application for the license, the applicant must file a schedule of charges which, when accepted by the State Tax Commission, must be published. Furthermore, each operator must file with the Commission an indemnity bond or insurance policy to protect patrons and the public in the collection of damages for which the operator may become liable. Also, a bond of \$1,000, payable to the State of Kentucky, must be filed with the commission, in assurance that

the applicant will pay any and all fees, taxes or penalties which may be due under the Act.

Truck operators and those hiring truck transportation realize several advantages from such regulations as those mentioned in the foregoing paragraph. Owners of livestock and other produce are protected against loss or damage en route by the requirement that all truck operators post bond or insurance policies to an amount equal to the value of an average load. Most truck operators feel that they are responsible for such losses, but in too many instances they can not pay damages because of their financial condition. The truck operators, on the other hand, are protected by being required to carry insurance to cover their individual needs. Furthermore, if operators know that they are responsible for any loss they may exercise greater care in handling and loading produce. They may also be more careful to provide equipment in the best of repair and better protection against inclement weather.

Another provision of the Kentucky Motor Truck Law affects, at least to some extent, the number of trucks operating in a particular territory. The Tax Commission is to license authorized trucks as common carriers only when a need for them is proved. Moreover, the expense of the license bond and insurance makes it more difficult for the in-and-out contract truck operator to get established in business. The policy of thus limiting the number of trucks operating in any particular territory has been followed in several states with apparent success. Such regulation enables anyone entering the business of trucking to feel assured that he may develop his business without the danger of having to compete with the in-and-out truck operator. It also makes it easier for trucking firms to maintain equipment in proper condition and offer a high type of service. A possible offsetting influence to such regulation of competition is the likely demand of the public for regulation of trucking charges in order to assure reasonable rates. Such regulation of rates has thus far consisted chiefly in requiring the filing of rate schedules, as in Kentucky, and the approval of the schedules by the proper regulatory authority.

Altho the Kentucky law does not require a bill of lading, any regulation which results in truck operators assuming complete financial responsibility for produce hauled would logically necessitate one. A bill of lading ordinarily contains the name of motor carrier, date and place issued, name of consignor, name of consignee, destination, description of shipment, weight, value, rate and charges, and the signature of the motor carrier or agent. This information forms the basis of settlement for any dispute which may arise between consignor and operator of the motor truck or the consignee. The bill of lading is especially important where a driver is buying livestock as well as hauling for hire, in order to avoid confusion of ownership. According to approved business methods, receipts, or bills of lading are safeguards for the protection of everyone concerned.

SOME ECONOMIC ASPECTS OF SHIPPING LIVESTOCK BY MOTOR TRUCK

Changes that have occurred or are taking place in the livestock industry, as a result of motor transportation are primarily in the methods of marketing and in some of the services rendered by agencies handling livestock in the marketing process. Production practices and production areas have not changed to an appreciable extent.

Before the advent of the motor truck and good roads many farmers who produced only a few head of livestock sold to local buyers who assembled the stock in earlots. Because of the uncertainty of markets these buyers traded on a wide margin. Usually the producer had to deliver the stock to the point where a trader was assembling livestock. This system has been practically discontinued in most of Kentucky since motor truck transportation has developed, and the local country trader frequently has been transformed into a commercial truck operator. The producer thus avoided the cost of transporting stock to a local concentration point and also got all the services and benefits derived by trucking livestock to the larger markets.

The widespread development of truck transportation has been one of the main factors in the development of direct market-

ing. Interior packers were the first to take advantage of this mode of transportation and the area from which they got livestock has been extended considerably. The establishment of concentration points where stock is either sold directly to packer buyers or shipped to a terminal market in carload lots has also been dependent upon the motor truck for its development. The extent to which either of these new marketing methods will finally affect livestock marketing is at present impossible to forecast, but that they have made for better conditions in the marketing of livestock is without question.

Many changes have been made in the services rendered by terminal marketing agencies because of the advent of motor truck transportation. When all livestock was delivered by railroads, it was possible to estimate receipts accurately. The truck, however, has made it practically impossible to do this. Bad weather within trucking radius of a market frequently causes the slowing up of shipments by motor truck, as the bulk of the stock does not leave the farm until the morning it is to be sold. This variation in daily receipts has frequently resulted in rather sharp price changes during the daily market period.

Schedules usually are arranged so that stock is delivered by train at stock yards either late in the afternoon or in the early morning, in order to enable stock to be sold before noon and the day's business completed shortly thereafter. However, as trucks do not operate on a fixed schedule, and many farmers desire to ship at night, and others do not start shipments until after getting the radioeast announcing opening market prices, truck receipts arrive at stock yards at almost any hour of the day or night. This situation makes it necessary for yardmen, salesmen, and buyers to be at their places of business for much longer than formerly. At one of the terminal markets to which livestock from Kentucky is shipped the closing hour is now 4 P. M. where it was formerly 12, noon. Receiving many small consignments has also necessitated an increase in the number of yardmen employed at most stockyards.

Receiving livestock in a large number of small consignments has also necessitated the increase of the office labor of the termi-

nal market commission firms. Where formerly it was necessary to make out one bill and one check for each carload of livestock, it is now necessary to prepare as high as twenty times that number. This change has increased the cost of handling livestock at the markets and offsets to some extent the higher market charges on truck receipts.

SUMMARY.

Highway transportation has become during the past 15 or 20 years one of the main arteries of our commercial system. Questions have arisen regarding the widespread use of this new form of transportation. Whence trucks bring their loads, where they go, what they carry, what truck service costs, the value of service rendered and the methods of regulating truck operations is information of value to the community.

In each epoch of American history livestock has been marketed by some dominant form of transportation, and each has been successively superseded by another. The main transportation system now engaging the attention of livestock shippers is the motor truck, and only time can tell to what extent it will replace previous methods of transportation.

Livestock shipments by motor truck and good roads are closely allied and the development of hard roads and the increased use of motor trucks must proceed together.

The trucking of livestock in Kentucky has increased rapidly during the last five years. Of the 331,214 head of livestock received at Cincinnati in 1930, from Kentucky, 34 percent were delivered by motor truck. At Louisville the truck receipts from Kentucky for the year were 277,500 head, or 67.01 percent. From January 1, 1931, to November 11, 1931, truck receipts of livestock at Evansville from Kentucky were 109,816 head. Livestock was received by truck at Cincinnati from 71 Kentucky counties, at Louisville from 53 Kentucky counties and at Evansville from 20 Kentucky counties, during the time studied. At Cincinnati 96.2 percent of all livestock received from Kentucky by truck was transported less than 60 miles, the bulk coming from within 45 miles of the market. The bulk of the livestock

trucked to Louisville originated in a belt located from 20 to 60 miles distant from the market and at Evansville 92 percent of the truck receipts from Kentucky came from within a radius of 60 miles. There was very little overlapping in the truck territories served by Cincinnati, Louisville or Evansville. In fact there was a sharp demarcation between the territories.

There were considerable differences in the percentage of receipts trucked into Cincinnati and Louisville. For example, truck receipts of cattle amounted to 54 percent of total cattle receipts while at Cincinnati only 17 percent of the cattle were delivered by trucks and a similar situation was true with hogs, for 65 percent of all hogs at Louisville were received by truck while at Cincinnati only 20 percent were so received.

Truckers of livestock can be divided into the following groups: farmers, contract operators and public carriers. The farmer truckers can be further divided into, first, those who own trucks and haul for themselves only, and second, those who own trucks and do some commercial hauling. With a possibility of getting different equipment and types of truck transportation to market, farmers are confronted with the problem of getting satisfactory service at the least cost. Many producers feel that by using farmer-owned trucks they get good service at lower rates, altho they themselves must assume the risk of losing stock en route. On the other hand, many producers prefer to use established trucking firms because of better equipment, protection and care of stock en route, and the financial responsibility of the firms, should loss or injury to stock occur.

Many farmers think that the use of motor trucks could be increased if improvements, such as the following were made: better trucking equipment and protection of livestock en route to market, more systematized business methods used by truck operators, better methods of handling livestock en route to market, uniform charging for services, better roads, and abolishment of practice of discriminating against livestock delivery by truck at the terminal markets.

The services rendered farmers by truck operators differed somewhat in the different market territories. The differences

were due primarily to the extent to which trucking had been developed within the territory. These services were much more extensive in the Cincinnati territory than in either of the other territories studied. Practically every farm in the territory south of Cincinnati was on a regular truck route, which was covered at least twice a week and in many places daily. Truckers in this territory have also developed the back haul to a much greater extent than other districts and many farmers now depend upon the truck driver to purchase and deliver to the farm, groceries, feed, coal, machinery, machinery repairs, fencing, roofing, and the like. Often practically all the farm and home supplies are purchased thru truck drivers.

The advantages to the farmer of livestock transportation by truck to market may be summarized under the following five heads. 1. Rapidity of service. 2. Convenience of service. 3. Cheapness of service. 4. Additional market outlets furnished for livestock. 5. Livestock producers enabled to visit the market often and gain a better understanding of market conditions and requirements.

Rates charged for trucking show considerable variations. It was impossible to make a comparison of the cost of trucking livestock with the cost of other means of transporting livestock to market because of the small amount of data. It can be said, however, that distance does not affect truck rates to the same extent as competition within an immediate vicinity or road conditions.

